

CHAPTER SEVEN LAND USE

INTRODUCTION

Chapter Seven initially identifies existing land uses in Carbon County in 1996. The identification of existing land use information was determined through the use of State and federal land records, as well as available electrical meter data from the four electrical utilities that serve Carbon County.

This information was supplemented and correlated with land use information that was derived from municipal water meter records of the 10 municipalities in Carbon County. The municipal clerks of each municipality, who regularly maintain this information, were extremely helpful in the clarification of municipal water meter data and related land use information.

The second portion of Chapter Seven evaluates anticipated land use demands and requirements to the year 2015 for several types of land uses. For example, potential economic expansion and development opportunities that are envisioned by local industry representatives are presented to help envision future industrial land use requirements.

The outgrowth of this analysis is the recommendation of one or more general land uses for all unincorporated areas of Carbon County. These recommendations are a reflection of the earlier evaluations of the community attitudes and issues, resident population, the environment, the economy, and existing land use trends. In addition, the recommendations of future land uses also incorporate considerations of general land use compatibility, accessibility, environmental conditions, physical and wildlife resources, and other related concerns.

The recommended land uses provide a general guide for future land use management decisions of Carbon County. The determination of general land use patterns that are desired by Carbon County will also enable the County Planning Commission to effectively modify or update existing zoning designations for lands in the unincorporated areas of the County, as well as the related 1972 Zoning Resolution. A September 24, 1996 Wyoming State Supreme Court briefing associated with Ford vs. Board of County Commissioners of Converse County, Wyoming clarified that county land use plans do not take the place of zoning. Rather, they provide a policy statement that provides a basis for the establishment, modification, and enforcement of zoning designations and related zoning codes.

The land use recommendations presented in Chapter Seven also provide guidance to existing landowners and potential investors. It is envisioned that Land Use Plan recommendations provide a departure point for future discussions between landowners, potential investors, land developers, and the County Planning Commission.

EXISTING LAND USES

Agriculture

In 1996, about 286 ranches and farms used approximately 2,721,000 acres of land in Carbon County for livestock and crop production on private lands (Wyoming Agricultural Statistics Service, 1996). The average farm or ranch operation contained approximately 9,480 acres.

Of the 2.7 million areas of private agricultural land, approximately 171,000 acres were used for the production of various crops such as wheat and hay. The remaining lands were used for livestock production.

The Bureau of Land Management administers some two million acres of public land in Carbon County. In 1996, approximately 2,256,549 acres of these lands were used for livestock production by approximately 144 permittees (Epp, 1998).

About 632,578 acres of land in Carbon County are administered by the U.S. Forest Service. In 1996, 36 federal permittees used about 176,535 acres of land in the Medicine Bow-Routt National Forest for cattle and sheep production. Approximately 42,273 acres were located in the Brush Creek district. The remaining 134,262 acres were situated in the Hayden District.

In FY 1996, the Wyoming State Loans and Surface Leasing Division leased approximately 321,675 acres to ranchers and farmers in Carbon County. These leases were made for the following agricultural uses:

- 318,747 acres for livestock production,
- 2,288 acres for hay production, and,
- 640 acres for the production of cultivated crops.

Residential

In 1996, there were approximately 7,274 residential facilities in Carbon County (Table 7-1). These facilities comprise a wide variety of single family residential units, residential apartments, townhouses, as well as mobile and modular homes.

Almost 85 percent of the residential housing in Carbon County are located within the County's 10 municipalities. The City of Rawlins contained about 3,694 housing units in 1996, or almost 50 percent of all housing units in Carbon County.

TABLE 7-1 LAND USES IN CARBON COUNTY 1996						
	<i>Residential Units</i>	<i>Commercial Units</i>	<i>Industrial Units</i>	<i>Public Facilities</i>	<i>Community Facilities</i>	<i>Private Utilities</i>
Baggs	144	18	0	5	2	1
Dixon	71	1	0	2	0	0
Elk Mountain	88	3	0	5	1	1
Encampment	283	18	3	6	4	1
Hanna	429	23	5	8	6	1
Medicine Bow	155	18	0	10	7	1
Rawlins	3,694	266	10	33	16	5
Riverside	62	6	0	1	0	0
Saratoga	935	99	1	17	11	3
Sinclair	271	5	1	2	1	0
Total Municipal Uses	6,132	457	20	89	48	13
Unincorporated Areas	1,142	135	91	53	14	48
Total County Uses	7,274	592	111	142	62	61

Notes: Estimated residential uses consider both occupied and vacant units.
Commercial uses include banks, drug stores, flower shops, etc.
Industrial uses include pipelines, oil wells, coal mines, oil refineries, construction companies, etc.
Public facilities include publicly maintained schools, state and county facilities, parks, etc.
Community facilities include buildings such as churches, Odd Fellows halls, etc.
Private utilities include telecommunications companies except cable companies, and power companies.

Source: Pedersen Planning Consultants, 1997; Municipal Town Clerks and Utility Collection Managers in Carbon County, 1997; Carbon Power and Light, 1996; Yampa Valley Electric, 1997; Pacific Power and Light, 1997; Hot Springs REA, 1997.

Roughly 19 percent of the total housing stock is situated in the unincorporated areas of the County. Assuming that the average ranch contains two residential units, about 572 housing units are located on rural ranches. The remaining 570 housing units in the unincorporated area represent single family homes, trailers, and modular homes on rural properties. These homes are primarily occupied by County residents who are not involved in commercial ranching or agriculture, or residents who rent their lands to nearby ranchers for supplemental pasture.

Through its development of earlier population estimates, Pedersen Planning Consultants determined that roughly 89 percent of the total housing stock in Carbon County is occupied throughout the year (Table 7-2). The remaining housing units represent vacation homes, vacant rental units, or vacant residential units.

TABLE 7-2 CARBON COUNTY OCCUPIED AND VACANT RESIDENTIAL UNITS 1996			
	<i>Occupied</i>	<i>Vacant or Seasonal</i>	<i>Total Residential Units</i>
Baggs	136	8	144
Dixon	59	12	71
Elk Mountain	67	21	88
Encampment	271	12	283
Hanna	419	10	429
Medicine Bow	148	7	155
Rawlins	3,611	83	3,694
Riverside	31	31	62
Saratoga	780	155	935
Sinclair	205	66	271
Total Municipal Residential Units	5,727	405	6,132
Unincorporated Areas	759	383	1,142
Total Residential Units	6,486	788	7,274

Source: Pedersen Planning Consultants, 1997

Since the early 1970's, 26 approved subdivisions have gradually been developed in the unincorporated areas of the County (Table 7-3). These subdivisions comprise roughly 12,000 acres of land. Approximately 99 percent of the some 1,616 lots in these subdivisions were developed for residential use.

Commercial

About 592 commercial facilities were in Carbon County in 1996 (Table 7-1). These facilities included a wide variety of retail establishments, office complexes, overnight accommodations, and other related structures.

Commercial facilities are based primarily in the City of Rawlins and the Town of Saratoga. About 62 percent of all commercial facilities in the County are located in these communities.

**TABLE 7-3
AUTHORIZED SUBDIVISIONS
IN THE UNINCORPORATED AREA OF CARBON COUNTY**

Subdivision Name	Approximate Acreage	Number of Lots
Aspen Highlands #1 and #2	442	96
Aspen Meadows	225	104
Baggott Rocks	1,251	113
Banker's Cove (Seminole Boat Club)	2	18
Calvert Addition	18	12
Cherokee Meadows	82	48
Cherokee Trail	223	40
Cottonwood Bluff	67	10
Cow Creek Station	258	49
"44" Subdivision	160	30
Ft. Steele Estates	20	60
Hidden Valley Estates	200	74
Indian Hills Estates	80	10
Miller Bend	89	17
Mountain View Estates	890	68
Old Baldy Corporation	89	102
Overlook Retreat #1 and #2	170	124
Peak View	161	15
Pedro Mountain Ranches	7,040	201
Rainbow Acres	39	8
River Bend Estates	5	36
Ryan Park	N/A	130
Sierra Madre	100+	49
Skyline Acres	50	50
White Rock Estates	160	132
Weber Mesa	160	20
Total Acreage and Number of Lots	11,981	1,616

Source: Carbon County Department of Planning & Development, 1998; and Pedersen Planning Consultants, 1998

Industrial

Industrial land uses primarily include some 111 industrial facilities such as the Sinclair Refinery, coal mines, lumber mills, oil wells, gas compressor stations, and oil and gas pipelines. Approximately 82 percent of these facilities are situated in the unincorporated areas of Carbon County (Table 7-1).

The remaining industrial facilities are located within the communities of Sinclair, Medicine Bow, Saratoga, Encampment, and Rawlins. The Sinclair Refinery is situated within the Town of Sinclair. Saratoga and Encampment each contain a lumber mill within their corporate boundaries. About 10 smaller manufacturing operations are located in the City of Rawlins.

Public Facilities

Public Buildings

Federal, State, County, and municipal buildings are distributed throughout the County. Public buildings typically include the County Courthouse, County office buildings, the Memorial Hospital County Road and Bridge equipment maintenance shops, County libraries, town halls, State and federal offices, and public schools.

Recreational Facilities

All of the 10 Carbon County municipalities maintain public parks. In addition, indoor recreational centers are operated by the City of Rawlins and the Town of Hanna.

Public Utilities

The 10 municipalities in Carbon County each operate community water and wastewater systems. Various County solid waste districts manage the operation and maintenance of solid waste landfills near Baggs, Elk Mountain, Rawlins, and Saratoga. A solid waste transfer station is situated at Encampment.

Transportation Facilities

Carbon County operates and maintains an extensive road system that comprises some 1,200 miles of improved roadway and approximately 40 bridges. The County road system comprises about 928 miles of dirt roads, approximately 250 miles of gravel roads, and roughly 90 miles of paved roadway (Nation, 1997).

The Wyoming Department of Transportation maintains portions of State Highways 70, 71, 72, 130, 230, 287, and 789, U.S. highways 30 and 287, as well as Interstate 80. In Carbon County, this major interstate highway generally extends between approximately 10 miles east of Arlington to about 15 miles west of Rawlins.

Public airports are situated in the City of Rawlins, the Town of Saratoga, as well as east of Dixon.

Community Facilities

There are about 62 community facilities in Carbon County (Table 7-1). These facilities are privately-owned buildings that are owned and used by local churches, community service groups, clubs, and private recreational organizations. The primary types of community facilities in the County include church buildings or complexes, as well as fraternal organization halls.

Private Utilities

Various telecommunications companies, private utilities, as well as oil and gas companies, operate and maintain a variety of structures and buildings that support a variety of electrical and telecommunication systems. These facilities include electrical substations, towers that support radio and telephone transmissions, telephone exchange buildings, and other related structures.

In 1996, there were approximately 61 structures and/or building complexes that were associated with the operation and maintenance of private utility systems in Carbon County (Table 7-1). Almost 80 percent of these structures and building complexes were situated in the unincorporated areas of the County.

LAND USE RECOMMENDATIONS

Agriculture

Anticipated Demand for Agricultural Land

There are some 286 commercial ranch operations that require sizeable land areas to support the production of cattle, sheep, hay, grains and other commercial agricultural products. The availability of land areas that can sustain the growth of grasses, provide surface water supplies, and limited vehicular access are essential elements to operating a commercial cattle operation in Carbon County.

Results from the ranch survey that was distributed to almost all commercial ranchers in Carbon County in 1996 indicate that the average ranch in Carbon County contains about 28,689 acres of land, or almost 45 sections of land. Some ranches in the County are considerably smaller than the average size reflected from the survey results. Available data from the Wyoming Agricultural Statistics Service suggest that the average size of a ranch operation is about 9,480 acres. In either case, it is clear that the average commercial ranch operation requires a sizeable amount of land to sustain a commercial cattle operation.

Ranch survey results also report that about 58 percent of the ranch operations in the County use federal lands that are administered by the U.S. Bureau of Land Management for the pasture of cattle. About 20 percent of the Carbon County ranch operations use lands on the Medicine Bow National Forest for seasonal pasture use.

The large commitment of land that is necessary to sustain, at least, existing commercial ranching activities raises a legitimate question concerning the importance and desirability of sustaining the existing level of commercial ranching in Carbon County. The extent of lands that are required to sustain existing agriculture will also impact potential opportunities that are afforded via other potential land uses. General considerations of the environment and the economy provide a practical direction.

Commercial cattle ranching operations, sheep production, hay and grain production, and other commercial agricultural activities in Carbon County represent one of the most effective forms of long-term resource conservation for both land and wildlife resources. While vast land areas are used to pasture cattle, the continual rotation of cattle on local rangelands and/or the production of hay on local ranches enables big game animals, mammals, and birds to compatibly inhabit the same environment. In the absence of agriculture, the potential loss of large tracts of private ranch lands would clearly "open the door" to a gradual to rapid urbanization of the County's landscape and parallel many changes that have occurred in the Front Range of Colorado and other parts of the western United States. Similar to the Front Range of Colorado, such urbanization would, at least:

- destroy large areas of wildlife habitat;
- significantly reduce the herd sizes of big game animals, other mammals, and birds;
- significantly alter vistas, views, and open spaces that are treasured by many County residents.
- foster increased land speculation;
- increase land values; and,
- generate a significant increase in the cost of public services for the development, operation and maintenance of new infrastructure.

In terms of the economy, existing cattle ranch operations annually generate approximately \$27.3 million of direct expenditures into the Carbon County economy which represented about 14 percent of the County's economic base in 1995. Indirect expenditures generated from agriculture are approximately \$11.5 million per year. Consequently, the impact of commercial agriculture upon the economic livelihood of Carbon County residents is significant.

With the loss of this important economic sector, the potential urbanization of agricultural lands would need to be replaced with some industrial activities to replace the economic benefits that are generated by agriculture.

Recommended Areas for Agricultural Expansion

In the context of these considerations, Carbon County recommends that all lands that have suitability for agriculture be used for future agricultural use unless existing land uses now preclude agricultural activities. This recommendation refers to both private and public lands in the County.

Some of the lands that are suitable for commercial agricultural in Carbon County also contain valuable minerals in the subsurface estate. Gravel, coal, as well as oil and gas resources can often be feasibly mined and used for commercial production. Such activities can usually share land and water resources without causing any significant impact to agriculture. Carbon County recommends and encourages the continued mining of these resources on agricultural lands. Mineral development enables some ranchers in the County to supplement the income that is derived from agricultural activities.

The continued economic viability of ranch and other agricultural operations is often tenuous. In recognition of this challenge, Carbon County envisions that other land uses such as dude ranches, bed and breakfast establishment, lodges, and related recreational facilities will also be established as an economic supplement to future agricultural activities.

Residential

Anticipated Demand for Residential Land

General

Recent population and economic trends do not signal any significant, short-term deficits in total housing inventory for Carbon County. With the exception of Rawlins, no detailed housing demand analyses have recently been made for each municipality or the unincorporated lands in the County.

Despite recent trends, a need for additional housing is foreseen in selected areas of the County near the turn of the millenium. Such demands will likely be generated by planned surface coal operations in the Carbon Basin and the anticipated influx of new truckers, mechanics, and their dependents.

In addition, there are national and regional trends that suggest a continuing demand for rural lands in the unincorporated areas of the County. These residential demands are discussed in somewhat greater detail in the following paragraphs.

Housing for State Department of Corrections Personnel

A 1997 housing assessment by the City of Rawlins points out the need for affordable, rental and single family housing opportunities that will be required to support the long-term operation of the planned maximum security prison in Rawlins, as well as housing for new inmate families. The City estimates that 295 additional housing units are needed to support these demands (City of Rawlins, Department of Community Development, 1997). Such needs are anticipated by the year 2001. The City of Rawlins is wisely anticipating these housing requirements and has established a Housing Task Force to pursue plans to meet these needs.

Temporary Housing for Maximum Security Prison Construction Workers

Temporary housing for construction workers will be needed to support the planned construction of the maximum security prison in Rawlins. The construction of this facility is expected to begin in the spring of 1998 or 1999 and continue for, at least, three years (Ortega, 1997). Temporary housing needs for these construction workers will likely generate demands for recreational vehicle spaces at existing RV campgrounds, trailer courts, as well as residential apartment units in the Rawlins area.

Temporary Housing for Oil and Gas Exploration Workers

Consultants previously projected that future oil and gas development activities in the Greater Wamsutter Area II would include the drilling of about 55 wells through the year 2005. However, some 280 wells have already been drilled in some 300 locations in Greater Wamsutter Area II (Guernsey, 1997). Consequently, only 20 additional wells are expected to be completed in this area during 1997. As a result, no significant impacts upon residential facilities in Carbon County will occur as a result of these oil and gas activities.

However, during the next 10 to 15 years, some 450 new wells in 300 locations are also expected to be developed within the adjoining Continental Divide and Washakie Basins (Guernsey, 1997). These oil and gas activities will generate a need for a combination of temporary and permanent housing in both Sweetwater County and Carbon County. Housing demand will likely reflect the desired use of recreational vehicles, mobile homes, residential apartments, and single family dwellings. Within Carbon County, the demand for these types of residential facilities is anticipated to occur in Rawlins because of its proximity to oil and gas development activities and the availability of community services.

Environmental impact analyses being prepared for the Great Divide Basin and Greater Wamsutter Area suggest that future oil and gas development will generally bring two groups of incoming workers to Sweetwater and Carbon Counties:

- workers associated with road construction, testing operations, the drilling and completion of wells, and pipeline construction; and,
- workers associated with the long-term operation and maintenance of oil and gas activities.

TRC Mariah, the consultant preparing the EIS, estimates that the initial labor force will generate employment for some 330 people per year between 1998 and the year 2018. The consultant believes that about 80-85 percent of this labor force will reside in Sweetwater County; the remaining 10 to 15 percent will live in Carbon County.

The operations and maintenance workforce is expected to generate approximately 146 new workers per year between 2001 and 2031. TRC Mariah assumes that approximately 50 percent of this labor force will reside in Sweetwater County; the other 50 percent are expected to live in Carbon County.

For the purposes of the Carbon County Land Use Plan, Carbon County believes that the amount of new workers who will reside in Carbon County will be considerably less. The County estimates that about six percent of the initial labor force will live in Carbon County, within the City of Rawlins. The influx of approximately 20 new workers per year is anticipated to create a demand for some 340 housing units during the 1997-2015 period (Table 7-4).

Carbon County also assumes that about 25 percent of the incoming operations and maintenance labor force will live in Carbon County within the City of Rawlins. This anticipated workforce is expected to generate a demand for an additional 555 housing units between the year 2005 and 2015, or about 37 housing units per year (Table 7-4).

Housing for New Transportation Labor Force Associated With the Planned Elk Mountain Mine

Pedersen Planning Consultants estimates that approximately 60 new transportation industry jobs, e.g., truck drivers and mechanics, associated with the mining of the proposed Elk Mountain Mine will represent new incoming workers to Carbon County. In order to evaluate the potential impacts of this employment upon residential demands, PPC arbitrarily assumed that these new workers reside in the seven different areas of the County (Table 7-5).

TABLE 7-4 ANTICIPATED OIL AND GAS LABOR FORCE IN CARBON COUNTY ASSOCIATED WITH GREAT DIVIDE BASIN AND GREATER WAMSUTTER DEVELOPMENT		
Planning Period	Number of New Workers	
	Road/Pipeline Construction Well Drilling/ Completion	Operations and Maintenance
1998-2000	40	0
2001-2005	100	185
2006-2010	100	185
2011-2015	100	185
Total New Workers	340	555

Source: Pedersen Planning Consultants, 1998

TABLE 7-5 ANTICIPATED DISTRIBUTION OF NEW TRANSPORTATION WORKFORCE ASSOCIATED WITH ELK MOUNTAIN MINE		
Community	Number of Workers	Potential Incoming Resident Population
Encampment	3	7
Elk Mountain	5	14
Hanna	30	82
Medicine Bow	10	26
Saratoga	3	8
Rawlins	7	18
Riverside	2	5
Total	60	160

Source: Pedersen Planning Consultants, 1997

Housing for Underground Miners Associated with the Elk Mountain Mine

Another source of future housing demands will likely be generated from proposed underground mining at the Elk Mountain Mine. Arch Coal, Inc. envisions the development of a test mine in the Carbon Basin in the year 2003. Such testing would assess the potential for extracting underground coal reserves from the proposed Elk Mountain Mine. If anticipated results are confirmed via field testing, Arch Coal, Inc. expects that underground mining in the Carbon Basin would occur between 2005 and 2030. Arch Coal, Inc. estimates that underground mining activities would generate employment for approximately 220 underground coal miners (Turner, 1997). In essence, such employment creates a demand for 220 new homes unless a portion of the workforce is derived from existing Carbon County residents.

Rural Residential Properties

The resident population of three in four nonmetropolitan areas in the United States increased between 1990 and 1994 (Fort Worth Star-Telegram, 1997). Demographers Johnson and Beale concluded that many Americans hold a strong conviction that small-town life is better than big-city life.

If the assumptions of Johnson and Beale and other demographers hold true, a continued demand for rural residential properties in Carbon County can be expected. The demand for rural residential properties that permit a rural lifestyle where families can live a slower-paced lifestyle, possibly operate a home-based occupation, and engage in some non-commercial agricultural activities.

Recommended Areas for Future Residential Expansion

Carbon County recognizes potential residential demands and the need to support four general types of residential land uses:

1. Urban residential expansion areas;
2. Suburban residential expansion areas;
3. Rural residential expansion areas; and,
4. Mountain and remote residential expansion areas.

Urban Residential Expansion Areas

Urban residential areas are needed to enable the future development of new housing areas for persons who desire the availability of public utilities and other public services, and a closer proximity to commercial retail shopping areas, restaurants, and medical services. Carbon County envisions that future housing in these areas would include approved residential developments, single family dwellings, apartment complexes, townhouses, as well as trailer and mobile home courts.

Carbon County recommends that urban residential expansion should generally occur on land parcels that will generally range between 5,000 square feet and five acres in size.

Urban residential expansion will take place within the corporate boundaries of the 10 existing municipalities in Carbon County, as well as within a one-mile radius of these communities. This policy is based upon the recognition that it is important to expand and strengthen the future consumer base that will:

- support the future operation, maintenance, and expansion of municipal water, sewer, and road systems;
- support the operation and maintenance of County solid waste disposal facilities;
- enable existing municipalities and Carbon County to more cost-effectively provide and expand fire suppression, police protection, and emergency medical services.

The density of future urban expansion areas in municipal areas will be determined by municipal land use plans and zoning ordinances. Urban expansion areas within a one-mile radius of the corporate boundary will eventually be defined by County zoning unless a given municipality has already gained authority from the Board of County Commissioners to assume the responsibility for land management in this area.

Suburban Residential Expansion Areas

Suburban residential expansion areas are needed to support residential land uses on land parcels, between 5 and 20 acres in size, that are in close proximity to existing municipal areas and public services, but may not be dependent upon public utility systems. However, when municipal water, sewer, and road improvements are eventually made in these areas, the connection to these public services would be mandatory for all new residential construction that occurs after 1998. Consequently, the long-term intent of Carbon County is to encourage the eventual expansion of municipal water and wastewater systems to suburban residential expansion areas when such development is feasible and practical for each respective municipal government.

Carbon County envisions that future housing in these areas would include only single family dwellings. Suburban residential expansion areas would be situated within one and two miles of existing municipal boundaries. This policy is based upon the recognition that it is important to expand and strengthen the future consumer base that will support the future operation, maintenance, and eventual expansion of municipal water and wastewater systems, City and County fire suppression, police protection, emergency medical services, and solid waste disposal facilities.

Suburban residential expansion areas, which contain no municipal water and wastewater systems, should only occur in areas where:

- there is known groundwater potential that is adequate to support proposed potable water uses and related individual groundwater well production;
- soils are adequate to support soil-based wastewater treatment;
- a deeded, vehicular access to the property is already available to gain access to future residential construction; and/or,
- County roads that may be used for vehicular access already receive annual or seasonal road maintenance.

Rural Residential Expansion Areas

The designation of rural residential properties is also needed to support the relocation of new, incoming families and individuals that seek a more rural living environment, and do not desire or expect the availability of public utilities and services. Carbon County envisions that future residential dwellings in these areas would include single family dwelling units, as well as modular or mobile homes on permanent foundations. Land uses that would accompany these residential areas would generally include non-commercial agricultural activities, home occupations, bed and breakfast establishments and lodges, and related activities.

Carbon County believes it is important that rural residential expansion takes place where:

- there is known groundwater potential that is adequate to support proposed potable water uses and related individual groundwater well production;
- soils are adequate to support soil-based wastewater treatment;
- a deeded, vehicular access to the property is already available;
- County roads that may be used for vehicular access already receive annual or seasonal road maintenance;
- proposed residential areas are in close proximity to existing residential communities in Carbon County; and,
- rural residential properties are situated within County-approved residential subdivisions.

Mountain and Remote Residential Expansion Areas

Selected areas of the County need to be used for mountain and remote residential uses. The County already has several remote, residential subdivisions that are presently used for seasonal recreational use. Similarly, there are numerous single family residences and cabins in various areas of the Medicine Bow National Forest. Most of the residential subdivisions and individual recreational cabin sites are situated in more remote areas of the Medicine Bow National Forest which are inaccessible during the winter months.

Carbon County agrees that these remote areas are desirable for recreational use. However, it also recognizes that ever-changing operational policies in public road maintenance, e.g., federal roadways, could easily change seasonal recreational uses to permanent residential uses in selected areas of the County.

Carbon County also believes that it is important for mountain and remote cabin sites to be completely independent of public services. Low density residential use, e.g., one dwelling unit on most parcels, is also envisioned to maintain the resources of the environment. Further, it is essential that mountain and remote residential uses do not significantly impact natural resources such as streams, wetlands, and related fish and wildlife habitat. In this context, the Carbon County envisions a careful site evaluation of all remote and mountain sites, and the continued use of development stipulations to conserve affected natural resources.

Industrial

Timber Industry

Anticipated Demand for Industrial Land

In the next 20 years, no significant expansion of the three existing timber mill operations in Carbon County is anticipated. However, Western Wood Products in Medicine Bow is contemplating the development of additional processing facilities that will increase the economic value of its post and pole products (Levengood, 1997).

Louisiana-Pacific Corporation (LPC) representatives indicate that it would consider the establishment of a finger-joint plant, which would employ 25 to 30 persons, within its existing mill complex in Saratoga if its mill could operate at full capacity. For this to occur, the LPC mill would need to regularly harvest about 25 million board feet (MMBF) of raw timber per year from the Medicine Bow National Forest and other nearby national forests.

The present concern of Carbon County is to keep the three existing timber mills economically viable. At the same time, the County favors any prospective timber industry expansion, e.g., finger-joint plant by LPC and scrag plant at Hammer Mill, that would generate added economic value to timber resources that are harvested and processed in Carbon County.

While no expanded land requirements are presently envisioned for the long-term expansion of the LPC or Hammer mill operations, there is an urgent, continuing need for the designation of selected timber resources in the Medicine Bow-Routt National Forest for the future commercial sale and harvest of sawtimber. The availability of selected timber resources for commercial harvest in these areas is essential to maintaining the viability of the three mills in the County.

In recent years, it is clear that various federal statutes have required the U.S. Forest Service to expand its scope of resource management responsibilities to include a variety of relevant considerations such as recreation, fish and wildlife habitat, and water quality. These issues are receiving increased attention of the U.S. Forest Service in its effort to achieve integrated resource management. Carbon County views the agency's expansion of resource management considerations as both necessary and desirable to achieve more effective resource management decisions.

At the same time, declining operational budgets and expanded management responsibilities have recently hampered the agency's pursuit of its more recent management objectives. The focus of the agency's resource management evaluations, programs, and decisions demonstrate an increased consideration of wildlife, soil, and water conservation issues in the U.S. Forest Service's Brush Creek/Hayden Ranger District. However, the methodologies that are used to consider the economic viability of the timber industry remain unclear. It is essential that economic benefits that are associated with future timber sales give equal consideration to the impacts upon the regional Carbon County economy, as well as communities that are especially dependent upon the industry for its livelihood.

Recommended Areas for Industrial Expansion

Carbon County recommends that lands on the south side of Medicine Bow should be reserved by the Town of Medicine Bow for a planned facility expansion by Western Wood Products. This area is suitable for some light industrial expansion in light of the existing rail and highway access.

Available land area at existing mill sites in Saratoga and Encampment, and the general operational plans of the LPC and Hammer mills suggest no need to use additional land areas in the vicinity of the mill sites in Saratoga or Encampment. For this reason, Carbon County

envisions no need to use additional land areas for the potential expansion of the timber processing facilities at Encampment and Saratoga.

At the same time, Carbon County recommends that the Towns of Encampment and Saratoga should continue to consider air quality and vehicular traffic considerations for adjoining lands that may eventually be proposed for other land uses, e.g., retail commercial and residential land uses. Otherwise, existing mill operations may unnecessarily be subjected to increased mill operation costs.

The U.S. Forest Service has identified lands in the Medicine Bow-Routt National Forest that it believes are suitable for the commercial harvest of sawtimber. Carbon County recommends that the U.S. Forest Service formulate a proposed timber harvest program on a portion of these lands that would provide the inventory needed to sustain the local timber industry. Such a program should be coordinated closely with Carbon County, local timber industry representatives, and concerned local residents.

Underground Coal Mining

Anticipated Demand for Industrial Land

By the year 2002, reclamation of the existing longwall panels at the Cyprus-Shoshone mine will likely have been completed. However, monitoring of the reclaimed area will continue through, at least, the year 2012 in order to satisfy the requirements of the U.S. Office of Surface Mining. The actual monitoring of these activities will be made by the State Department of Environmental Quality, Land Quality Division.

If governmental approval is given for the development of the Carbon Basin (about 12 miles southeast of Hanna), underground coal mining activity may eventually occur in the Carbon Basin after surface coal reserves are initially extracted by Arch of Wyoming. The parent company of Arch of Wyoming, Arch Coal, Inc., has underground mining capability and may eventually pursue this development opportunity (Turner, 1997). The mining opportunities associated with the Carbon Basin area are described more fully in Chapter Four in the context of surface mining activities.

Recommended Areas for Industrial Expansion

In light of the potential underground mining activities, Carbon County recommends that, at least, the following areas could be used to accommodate potential industrial mining activity to the year 2015:

- the Barrel Springs area,
- the Carbon Basin area, and,
- other known coal deposit areas.

Surface Coal Mining

Anticipated Demand for Industrial Land

Ongoing surface mining activities are occurring north and west of Hanna at the Seminole II and Medicine Bow mines. Planned surface mining activities in the Carbon Basin are proposed to begin by the year 2001. Arch Mineral Corporation may also carry out underground mining after less costly surface production is nearing completion.

Recommended Areas for Industrial Expansion

In view of ongoing and potential surface mining activities, the County Planning Commission recommends that the following areas could be used for future industrial mining:

- Seminole II and Medicine Bow mine areas, and,
- proposed Carbon Basin area.

While the focus of future surface mining opportunities lies in the Carbon Basin, several other long-term coal development prospects are located in Carbon County. The U.S. Bureau of Land Management's Medicine Bow-Divide Resource Management Plan identified five other potential coal development areas on federal lands in Carbon County:

- Red Rim,
- Indian Springs,
- China Butte,
- Atlantic Rim, and,
- Hanna Basin.

The general size of potential deposits ranges between 25 and 191 million tons (U.S. Bureau of Land Management, 1988). The potential volume that could be economically recovered from these areas was not determined. Nevertheless, Carbon County recommends that these areas should be used for potential mining activity.

Other Mining Opportunities

Anticipated Demand for Industrial Land

Discussions with representatives of the State Geological Survey office indicate that other potential industrial and hard rock mining opportunities are available throughout Carbon County. At the time of this report, at least 12 mining companies annually explore these potential opportunities during the summer months (Harris, 1998).

Recommended Areas for Potential Expansion

Potential opportunities associated with the mining of various industrial materials and hardrock minerals will require future vehicular access to various areas if they are to be available for geotechnical investigations and potential extraction. These potential mining opportunities are generally located in the areas summarized in Table 7-6.

TABLE 7-6 POTENTIAL INDUSTRIAL AND HARDROCK MINERAL MINING OPPORTUNITIES CARBON COUNTY, WYOMING	
Potential Minerals and Industrial Materials	Potential Exploration and Mining Areas
<i>Industrial Minerals</i>	
Sand and gravel	Scattered throughout Carbon County
Limestone	Rawlins Uplift area, north side of Shirley Mountains, and south side of Ferris Mts.
Uranium	Shirley Mountains and Poison Basin (west of Baggs)
Bentonite	North and southeast of Medicine Bow
Decorative and dimensional stone	South of State Highway 70 and north of Huston Park Wilderness, north of Rawlins, and various locations throughout Carbon County
Zeolite	North end of Sierra Madre near headwaters of Sage Creek
<i>Hardrock Minerals</i>	
Gold, Silver, Copper, Nickel, Cobalt, Platinum, and Palladium	Bradley Peak and area between east end of Ferris Mts. and the Seminole Mts. Woods Mountain area (south of Encampment); Seminole Mountains; Snowy Range area (Douglas Creek and Lake Owen area); most of Sierra Madre area
Zinc and Lead	South of Encampment near Wyoming- Colorado border
Diamonds	Snowy Range area, Medicine Bow Mountains

Source: Hausel, 1998; Harris, 1998

Oil and Gas Industry

Anticipated Demand for Industrial Land

The future growth of the oil and gas industry is dependent upon the continued availability and accessibility to lands that contain oil and gas reserves. Because of the proprietary and competitive nature of this industry, the location of potential reserves can only be generalized.

For planning purposes, the location of past and ongoing oil and gas production provides an important indication of potential reserves. Similarly, the presence of existing pipeline systems and roads are critical factors that influence the economics of future investment decisions for oil and gas exploration and production.

Recommended Areas for Industrial Expansion

A review of available information and discussions with industry representatives strongly suggest that significant portions of the Great Divide and Washakie geologic basins continue to hold promise for continued oil and gas development during the next 20 years. With this perspective, Carbon County recommends that the following areas should be used for potential oil and gas exploration and production, as well as related oil and gas processing facilities:

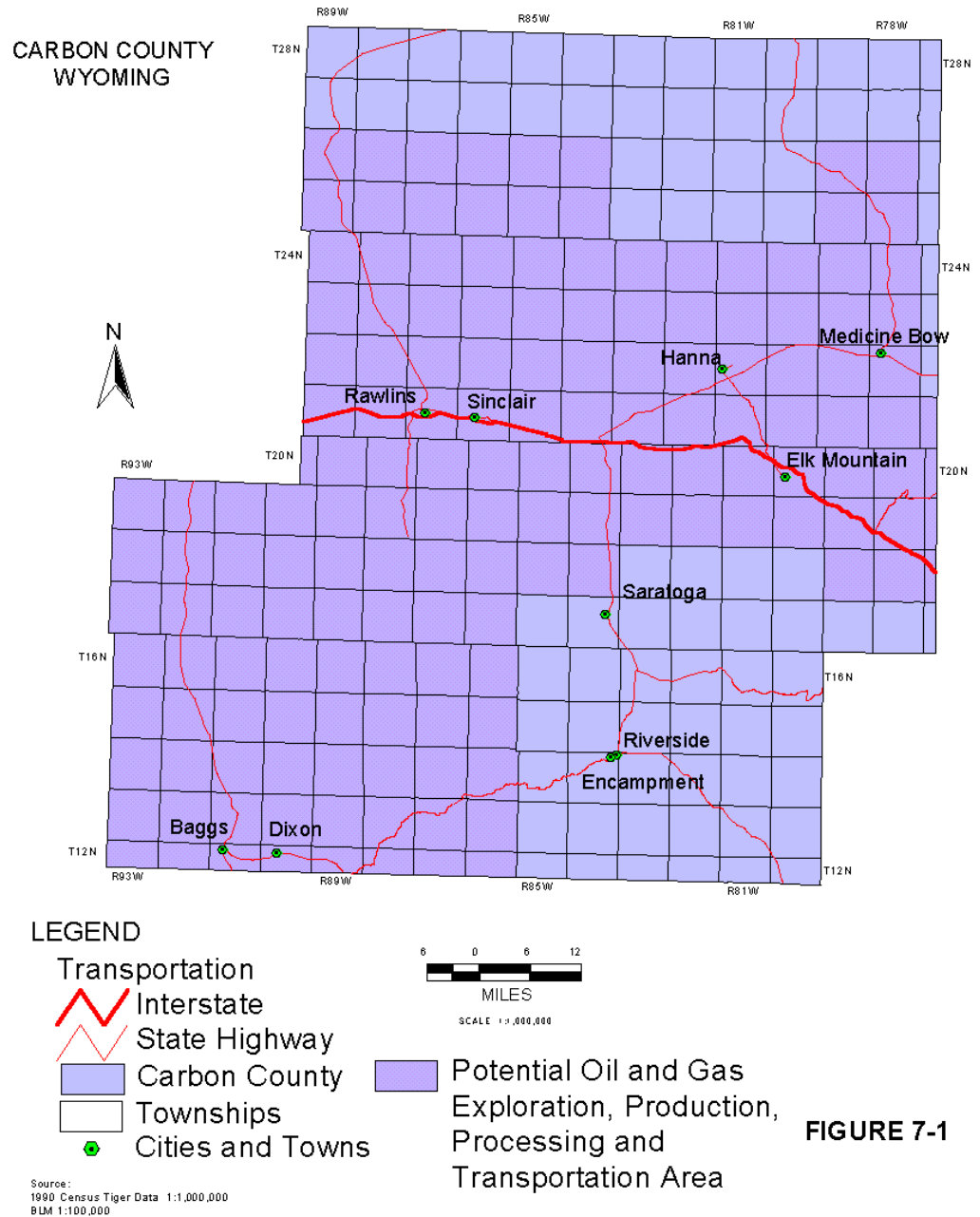
- Land areas between the Colorado border and the Ferris Mountains that are located between townships 12 and 26, range 86 through 93
- In the Hanna Basin, lands north and east of Rawlins and south of the Seminoe Reservoir and the Shirley Mountains. More specifically, the lands between townships 21 through 26, range 84 through 87, as well as the lands between townships 21 through 24, range 78 through 80
- Land areas south and east of Sinclair and Interstate 80 between Townships 18 and 20, range 84 through 86
- Other known oil and gas reserve areas

Another important area that is desirable for the location of potential oil and gas processing facilities and product transportation systems is an east-west corridor through Carbon County where the Sinclair Refinery, gas processing plants, and many related pipeline systems are already located. As the demand for gas and oil increases in market areas such as Kansas, Oklahoma, and Utah, some oil and gas processors may desire to develop new gas processing plants, e.g., compressor stations, in the vicinity of existing product transportation systems. Such facilities will help gas companies increase the potential volume of gas that can be transported to market destinations

In order to accommodate the potential development of gas processing facilities, crude oil gathering system, and other economic opportunities, Carbon County recommends that an oil and gas processing and transportation corridor be used between the east and west boundaries of Carbon County. This corridor would generally follow the route of Interstate 80. More specifically, the corridor would include all of Townships 18 and 24 between the west boundary of Carbon County and Elk Mountain. Between Elk Mountain and the east boundary of Carbon County, the corridor would include the lands that are situated in townships 18 through 21, range 78 through 80 (Figure 7-1). However, the corridor would exclude any lands in the Medicine Bow National Forest.

Carbon County recommends that the preceding geographical areas that are recommended for oil and gas exploration and production, processing facilities, and transportation systems should not be exclusively used for these purposes. Much of the areas recommended for use by the oil and gas industry are also very suitable for cattle ranching and other agricultural activities. Some areas of the corridor are also well located to provide public recreation opportunities, or vehicular access to nearby recreational areas. The proposed east-west corridor is also desirable to support other potential industrial activities that require convenient

PROPOSED AREA OIL AND GAS EXPLORATION, PRODUCTION, PROCESSING AND TRANSPORTATION



access to Interstate 80. The four land uses envisioned for the corridor are generally considered to be compatible. Consequently, the presence of one of the four recommended uses would not exclude the other.

Other Light Industrial Activities

Anticipated Demand for Lands to Support Light Industrial Activities

Future industrial development projects associated with coal mining, oil and gas, timber, and other industries may generate a future demand for several smaller industrial parks or complexes. Primary industrial activities could encourage the relocation of smaller manufacturers, as well as supporting commercial services, with the convenient availability of Interstate 80 and the adjoining Union Pacific rail corridor.

Aside from the support of primary industrial activities, Carbon County believes that it is essential to encourage other light industrial activities to foster an increased economic diversity in the regional economy. The County also believes that Carbon County residents generally favor smaller industrial enterprises that employ between 10 to 50 people.

Carbon County envisions that potential light industrial areas will generally contain between 40 to 80 acres of land. Further, these areas will need to be accessible to Interstate 80, the Union Pacific railroad corridor, or other State highways. The Carbon County communities that are situated along this I-80/UP Railroad corridor include Rawlins, Sinclair, Hanna, and Medicine Bow.

Saratoga is located south of Interstate 80, but is located along the rail spur that presently serves the Louisiana-Pacific mill. In addition, a potential industrial site is situated northwest of the LPC mill that adjoins industrial-zoned lands in the Town of Saratoga.

Existing industrial sites, which are situated within and near the Town of Baggs, e.g., 44 Subdivision, contain industrial sites that are located adjacent to State Highway 789. These areas can provide convenient vehicular access to the nearby Washakie Basin and northern Colorado. However, as these areas become fully occupied, other areas should be developed.

The Towns of Encampment and Riverside are located adjacent to State Highway 230. Some smaller industrial sites are within each of these communities. Both communities have convenient access to northern Colorado. A few additional parcels in the vicinity of these communities is desirable to, again, achieve greater economic diversity without compromising the lifestyle of residents and visitor industry activities.

The City of Rawlins has industrial sites within its municipal boundaries. At least one industrial area is situated in the City where supporting utilities are already available.

Recommended Areas for Industrial Expansion

In view of the opportunities for potential development, Carbon County believes that selected land areas should be used for smaller, light industrial complexes in the vicinity of all communities in Carbon County.

Commercial

Visitor Industry

Anticipated Demand for Commercial Land

In 1996, a significant renovation was made of the Saratoga Inn in Saratoga. However, no new plans for accommodation facilities or significant facility expansions are known to be in progress at the time of this report.

In terms of visitor attractions, an ongoing proposal for a privately-owned and developed downhill ski area has been proposed for an area that is situated southwest of Encampment near Green Mountain. The proposed downhill ski facility site is located in portions of the following areas:

- Sections 1 and 2, Township 13N, Range 85 West, and,
- Sections 35 and 36, Township 14N, Range 85 West.

The stated objective of this proposed facility is to provide winter recreational opportunities for County and other Wyoming residents, as well as other winter visitors.

Carbon County believes that a private ski area would be desirable to help develop more winter recreation opportunities for visitors. Such development would bring greater economic viability to local accommodations and other retail services in the Encampment-Riverside-Saratoga area.

Recommended Areas for Commercial Expansion

Carbon County recommends that lands near Green Mountain be used for the potential development of a private downhill ski area.

Transportation

Anticipated Demand for Commercial Land

No short-term expansion of existing truck stops or the UP Railroad system are foreseen by industry representatives at the time of this report.

Some renovation of the Rip Griffin's Truck and Travel Center is expected sometime in the 1997-1998 period. However, such improvements will be made within the existing complex (Hone, 1997).

The Burns Brother's Travel Stop is considering plans to expand on private property that is adjacent to the existing truck stop complex. The expansion will include the construction of a larger store and restaurant facility (McLaine, 1997).

However, increased commercial truck traffic will eventually generate an increased demand for one or more truck stops along the I-80 corridor. Increased truck traffic along Interstate 80 will also generate a related demand for more motel and hotel facilities, as well as eating establishments, along the Interstate 80 corridor.

Increased local vehicular traffic on local State highways in the County may also encourage some future investment into commercial service stations, convenience stores, and other commercial facilities along these corridors.

Recommended Areas for Commercial Expansion

As interstate truck traffic increases along Interstate 80, the potential investment opportunity for additional truck stop development can be expected. Carbon County recommends that such development be located near existing vehicular exits along the Interstate 80 corridor.

Despite the potential long-term opportunities for the development of greater accommodations and eating establishments along the I-80 corridor, Carbon County recommends that future commercial facilities, other than truck stops, should be located within the commercial areas of existing communities that adjoin the Interstate 80 corridor. Otherwise, the potential economic benefits of these facilities are less likely to create and encourage indirect sales opportunities for local eating establishments and other retail services.

Carbon County recommends that highway business activities, e.g., service stations, convenience stores, and related facilities, along State highways should be located within a two mile radius of all municipal boundaries in Carbon County. Otherwise, the County will be plagued with a growing amount of unnecessary, strip development that will eventually impair scenic vistas and views for both residents and visitors.

Since eight of Carbon County's 10 communities have assumed no legal responsibility for zoning outside of their municipal boundaries, Carbon County recognizes the need for the County to work cooperatively on commercial land use proposals within two miles of a given municipality. Carbon County recommends that such collaboration would include, at least, regular consultation with municipal town councils and planning commissions concerning commercial land use proposals within a two-mile radius of any municipality in Carbon County.